

**WHAT IS CLAIMED IS:**

1. A waveguide structured package, comprising:  
an upper end housing;  
5 a lower end housing including waveguides which a RF signal is input  
to and output from;  
a semiconductor chip disposed between the waveguides,  
wherein the semiconductor chip includes an input strip portion and  
an output strip portion for propagating the RF signal via the waveguides,  
10 and  
wherein the upper end housing and the lower end housing are  
coupled to each other.
2. A waveguide structured package according to claim 1, further  
15 comprising a dummy PCB disposed between the semiconductor chip and the  
lower end housing.
3. A waveguide structured package according to claim 2, wherein a top  
of the dummy PCB is attached to the semiconductor chip, and a bottom of  
20 the dummy PCB is attached to the lower end housing.
4. A waveguide structured package according to claim 2, wherein the  
dummy PCB comprises a plurality of via holes.

5. A waveguide structured package according to claim 1, wherein the input strip portion comprises:
- a probe for receiving the RF signal via the waveguides;
  - a microstrip-waveguide transition portion through which the RF signals received by the probe is transmitted; and
  - a microstrip line for outputting the RF signal transmitted through the microstrip-waveguide transition portion to an input pad of a main circuit portion provided within the semiconductor chip.
6. A waveguide structured package according to claim 5, wherein the microstrip line and the input pad are electrically connected to each other.
7. A waveguide structured package according to claim 1, wherein the output strip portion comprises:
- a probe for receiving the RF signal from an output pad of a main circuit portion provided within the semiconductor chip;
  - a microstrip-waveguide transition portion through which the RF signals received by the probe is transmitted; and
  - a microstrip line for outputting the RF signal transmitted through the microstrip-waveguide transition portion to its exterior via the waveguides.
8. A waveguide structured package according to claim 7, wherein the probe and the output pad are electrically connected to each other.

9. A method of manufacturing a waveguide structured package, comprising;

(a) forming an upper end housing having at least two grooves at a part thereof;

5 (b) forming a lower end housing by forming the waveguides correspondingly to the grooves and mounting a semiconductor chip between the waveguides, the semiconductor chip comprising an input strip portion and an output strip portion for transmitting RF signal input and output through the waveguides; and

10 (c) coupling the upper end housing and the lower end housing correspondingly to each other.

10. A waveguide structured package according to claim 9, wherein a dummy PCB is attached between the semiconductor chip and the lower end  
15 housing using an adhesive.